IMPLEMENTING SEMANTIC MAPPING STRATEGY TO ENHANCE STUDENTS' ENGLISH VOCABULARY AND SPEAKING ACHIEVEMENTS

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Abstract: This quasi experimental-based research evidently concentrated on the effectiveness of semantic mapping strategy in comparison to direct translation technique to enhance students' English vocabulary and speaking achievements on descriptive texts. Students' perception was additionally studied. The instruments were tests and questionnaires. One-way analysis of variance (ANOVA) was applied to analyse quantitative data obtained through the tests and an analytic scoring rubric was developed to support speaking performance assessment. The outcomes disclose that there is a significant dissimilarity observed through the individual total scores and *F* ratios obtained by the two groups. Semantic mapping affected the experimental students' English vocabulary achievement powerfully and their English speaking achievement moderately. Moreover, their positive perception appeared. These indications, contrarily, did not apply to the control group treated with direct translation technique. To conclude, this strategy is superior to direct translation technique.

Keywords: Semantic Mapping Strategy, English Vocabulary Achievement, English Speaking Achievement

Abstrak: Penelitian quasi-eksperimental ini berfokus pada efektivitas strategi peta semantik sebagai perbandingan dari teknik terjemahan langsung dalam meningkatkan penguasaan kosakata dan kemampuan berbicara yang berhubungan dengan teks deskriptif. Persepsi siswa juga menjadi bahan penelitian. Instrumen yang digunakan meliputi tes dan kuesioner. Analisis variansi satu arah diterapkan untuk menganalisis data kuantitatif yang diperoleh melalui tes dan sebuah rubrik penilaian analitis dikembangkan untuk mendukung penilaian performa berbicara. Hasil penelitian memperlihatkan adanya perbedaan signifikan berdasarkan nilai individu secara keseluruhan dan rasio *F* yang diperoleh kedua kelompok. Strategi peta semantik membawa pengaruh kuat terhadap penguasaan kosakata dan pengaruh sedang terhadap kemampuan berbicara. Lebih lanjut, persepsi positif siswa muncul. Indikasi-indikasi ini sebaliknya tidak ditemukan pada kelompok kontrol yang belajar dengan menggunakan teknik terjemahan langsung. Alhasil, strategi peta semantik lebih unggul daripada teknik terjemahan langsung.

Kata Kunci: Strategi Peta Semantik, Penguasaan Kosakata bahasa Inggris, Kemampuan Berbicara bahasa Inggris

Mastering vocabulary is indisputably a vital aspect in the activation of English communication. To begin with, the insufficiency of vocabulary results in ineffective communication amongst people. Thus, vocabulary serves as a basic access to a language and enables the people to produce ideas and understand every piece of information clearly.

Dealing with the English learning at schools, vocabulary is importantly taught as a basis for both receptive and productive skills such as listening, reading, speaking, and writing to enhance the students' performance. It is evident that vocabulary plays an important role in English language skills (Vedyanto, 2016, p. 54). The greater vocabulary the students master, the better they perform their language (Zahedi & Abdi, 2012b, p. 2264). Students in every level, nonetheless, encounter obstacles in learning and mastering English vocabulary. The main reason is that vocabulary is not a developmental skill or one that can ever be seen as fully mastered, but the knowledge of meanings of words (Hiebert & Kamil, 2005, p. 2).

To disclose the researchers' self-experience-based evidence of observation, EFL teachers of SMP Santu Petrus traditionally implement direct translation technique in teaching English vocabulary. The activities are mainly asking for and offering definitions of words. This insists on the EFL students of SMP Santu Petrus to memorise word definitions. As a result, they are dependent on their EFL teachers, are not creative when coping with tasks, do not have deep and critical thoughts, cannot use the vocabulary in appropriate contexts, and cannot express ideas in speaking and writing well. Behaviourally, they have a small amount of interest and motivation in studying English and feel a little reluctant to understand the teachers' explanations (Vedyanto, 2016, p. 54).

Such indications were also found out by Abdelrahman (2013), Dilek & Yürük (2013), Radwan (2011), Saeidi & Atmani (2010), and Zahedi & Abdi (2012a) when the students applied ineffective vocabulary learning strategies. To provide a solution in their research, these researchers applied semantic mapping. All of them explored the effect of instructing vocabulary through such strategy and direct translation technique at public schools and universities, and they successfully proved that the former one was more effective than the latter one.

Having examined their research works thoroughly, neither of them discussed the semantic mapping effectiveness in enhancing the EFL students' English vocabulary and speaking achievements in which the source language is Indonesian pertaining to descriptive texts. Moreover, junior high schools have scarcely been selected to be in investigation. Finally, the previous researchers did not fully concern aesthetic codes to be completely integrated in the semantic maps. These stimulate the researchers to fill in the research gap and purely investigate the semantic mapping effectiveness on Year-8 students' English vocabulary and speaking achievements on descriptive texts.

The present research is conducted based on the school-based curriculum (KTSP) currently implemented by SMP Santu Petrus. This curriculum was implemented in the academic year of 2006/2007 and as recently as in the academic year of 2009/2010 (Depdiknas, 2009, p. 1). It can be developed and determined by the implementers through the need consideration

(Permendiknas/24/2006, 2006, pp. 2-3). The other legal evidence becoming the basis of this research conduct is noted in National Education Ministerial Regulation of the Republic of Indonesia (Permendiknas/23/2006, 2006, pp. 1-2) on junior high school graduates' competencies. It is affirmed that the ability to tell the description is required.

There is a strong belief that this research remains the evidence that promotes semantic mapping as a vital strategy changing the traditional teaching of vocabulary and speaking. Solutions to obstacles that the students encounter can also be yielded. Positive contributions can be generalised to EFL students, EFL teachers, and educational institutions.

Extensively elucidating detailed literature of semantic mapping is necessary to gain comprehensive understanding. Semantic mapping refers to a visual representation of knowledge or concept displayed with categories and their relationship in a graphic arrangement (Agustina, Ngadiso, & Rochsantiningsih, 2013; Antonacci, 1991; Dilek & Yürük, 2013; Ghazal, 2007; Nilforoushan, 2012; Sadeghi & Taghavi, 2014; Sarigul & Ashton, 2005). There are two principal aspects of semantic mapping such as meaning and mechanic. The meaningfulness is realised since words share their identical meaning one another, while a mechanical aspect indicates that it is necessary to contextually use the words (Baleghizadeh & Naeim, 2011, p. 12).

A semantic map primarily presents a key concept or a main idea and categorised concepts associated with the key concept (Dilek & Yürük, 2013, p. 1533). Procedurally, the students are required to experience four steps to be successful in mapping the vocabulary. In the beginning, they state the key concept which is assigned by the teacher. Following this step, in order to have simplification, they write a list of known words related to the key concept. They think of how to group the words into the categories afterwards. Ultimately, analysis is made to see the interrelationship of the words (Saed & Al-Omari, 2014, p. 92). When the teacher needs to quickly get suggested words, however, the semantic map can be presented on the blackboard (Arshadi & Yavari, 2015, pp. 24-25).

Specifically, as a kind of strategy of vocabulary instruction, semantic mapping is trusted to be a useful way to teach vocabulary which provides the teacher with an assessment of the students' prior knowledge or schema availability on the topic (Achmad, 2013; Agustina, et al., 2013; Debat, 2006; Nation, 2000). An cited in Zahedi & Abdi (2012a, p. 2274) additionally explains that this is a strategy incorporating a variety of memory strategies like grouping, using imagery, associating, and elaborating, and it is important for improving both good memory and deep comprehension of new vocabulary items. In other words, semantic mapping increases the students' ability to remember the words and ideas (Nation, 2008; Steele & Mills, 2011). Apart from the recall, semantic mapping trains the students to be self-directed, active, and creative when taking their responsibilities (Agustina, et al., 2013; Arshadi & Yavari, 2015). Further development of more complex productive skills, i.e. writing and speaking can also be achieved through the semantic mapping. Nation (2000, p. 208) suggests four

typical activities in which the ultimate one indicates that semantic mapping creation is not the final outcome but it serves as a basis for speaking or writing.

In a winning comparison to the other strategies, semantic mapping motivates the students to cover more comprehensive vocabulary. Contextualised learning of vocabulary is crucial but is often neglected (Ganapathy & Kaur, 2014; Zhou & Niu, 2015). Semantic mapping strategy actualises such learning since it naturally brings clarity through the links of words and representation of pictures. Furthermore, it helps the students to fully concern contextualisation by writing their ideas in a form of sentences. They, thus, can have effective oral and written communication (Assaly & Smadi, 2015; Zhou & Niu, 2015) and leave the habit of learning vocabulary in an isolated and abstract manner (Ganapathy & Kaur, 2014, p. 81). The philosophy remains true guidance that implementing semantic mapping strategy encourages effective and efficient Higher Order Thinking Skills (HOTS) in Bloom's taxonomy.

Being aware of the advantages of implementing the semantic mapping, the teacher should introduce its use early (Ghazal, 2007, p. 89), provide concept discovery tasks (Smith & Humphreys, 2006, p. 262), and continuously attempt to encourage the students to find and develop more lexical items based on their prior knowledge and map them correctly while learning. The basic reason is that new vocabulary knowledge should be achieved (Sadeghi & Taghavi, 2014, p. 12). In the sense that it is challenging to apply semantic mapping, Dilek & Yürük (2013) and Ivone (2005) believe that learners should get supports in their discovery from the dictionaries when semantic problems occur due to new words. This outcome is a big success when the teacher convinces them confidently (Takac, 2008; Thornbury, 2002).

Within the scope of teaching and learning of English as a Foreign Language (EFL), it is undeniable that learner centredness is vital (Farrell & Jacobs, 2010, p. 17). Learners typically deserve more opportunities to manage themselves to be successful in learning English (Farrell & Jacobs, 2010, p. 55). Teachers, on the other hand, generally facilitate their learners' ways of learning (Farrell & Jacobs, 2010, p. ix). One of the strategies that supports the activities under this precept is semantic mapping. Vocabulary knowledge and speaking skills can be developed through it. Achievements further appear. The assessment indicators of these achievements are mainly scores. However, such indicators provide incomplete description of a learner's characteristics. Working in an educational field, identifying learners' perception of learning strategy is fundamental to gain a total interpretation. As affirmed by Gay, Mills, & Airasian (2011, p. 255), data derived from perception support numeric achievement data. Farrell & Jacobs (2010, p. 106) make this explanation more specific by stating that learners' perception provides useful information that can be used by the teacher to improve the quality of teaching and learning.

Apparently, this research supports effectiveness of semantic mapping strategy in comparison to direct translation technique on Year-8 students' English vocabulary and speaking achievements on descriptive texts. It remains true that the findings are expected to be in line with this statement. There are, hence, two

hypotheses that can be formulated such as a null hypothesis (H_o) and an alternative hypothesis (H_a).

A null hypothesis (H_o) is formulated as a statement noting that there is no significant dissimilarity between the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English vocabulary and speaking achievements on descriptive texts. They can be observed through arithmetic means obtained in the two distributions. Statistically, it is written as follows:

$$H_o: \bar{X}_1 = \bar{X}_2, \alpha = .01, \text{ if } F_{ratio} < F_{critical}$$

What can be interpreted from this equation is that the null hypothesis (H_o) is accepted if the means of the individual total scores in distributions 1 and 2 are equal and if the F_{ratio} is less than the $F_{critical}$.

An alternative hypothesis (H_a), conversely, signals that there is a significant dissimilarity between the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English vocabulary and speaking achievements on descriptive texts. To make this statement mathematically logical, the following equation is given:

$$H_a: \bar{X}_1 \neq \bar{X}_2, \alpha = .01, \text{ if } F_{ratio} > F_{critical}$$

Interpretatively, the rules of deciding the acceptance of the alternative hypothesis (H_a) and confirming .01 as the level of significance are that the means of the individual total scores in distributions 1 and 2 must be not equal and the F_{ratio} is greater than the $F_{critical}$.

METHOD

This study was conducted to Year-8 students of SMP Santu Petrus in Pontianak in the academic year of 2015/2016. Clarifying the design of this research, quantitative research generates statistics through the use of large-scale survey research (Dawson, 2002, p. 23). Consequently, computation, measurement, and statistics were included in it.

The researchers applied a quasi-experimental design pertaining to the quantitative nature. This quantitative research design assesses the effectiveness of the independent variable (Singh, 2007, p. 67). It included an experimental group and a control group in the intact classrooms because there was impossibility to randomise the research participants. In a logical sense, each participant stayed in an existing classroom as predetermined based on the management of the school (Ary, Jacobs, & Sorensen, 2010; Creswell, 2012; Fraenkel & Wallen, 2009; Gay, et al., 2011; Jackson, 2010; Walliman, 2011). Despite the fact that it was impossible to have complete control, rational conclusions could be reached (Ary, et al., 2010, p. 316).

In carrying out the research, the two groups which were randomly assigned, i.e. one experimental group and one control group took different treatment. The experimental group implemented semantic mapping strategy. The control group, contrarily, was taught using direct translation, a simple and traditional technique in which short meanings are precisely linked from the words in the first language (as defined by Abdelrahman, 2013; Nation, 2000; Radwan, 2011; Shiyab & Abdullateef, 2001; Zahedi & Abdi, 2012a, 2012b).

Concerning the sampling technique, since the fixed classrooms had been set and randomising each individual was impossibility, cluster sampling was applied. It is a technique used to randomly select and include groups comprising research participants who have similar characteristics which are relevant to the research variables. When the clusters have been selected, all participants must take part in the research (Ary, et al., 2010; Fraenkel & Wallen, 2009; Gay, et al., 2011; Jackson, 2010; Peck, Olsen, & Devore, 2012; Scott & Usher, 2011; Singh, 2007; Stangor, 2011).

One way to randomise the sample is through a lottery using slips of paper (Ary, et al., 2010; Peck, et al., 2012). Based on this recommendation, the researchers applied the procedure. The sample of each of the two groups in this research was determined through the lottery in which seven small folded pieces of paper with alphabetical codes from A to G representing all the classes in the eighth grade were put into a small box. The box was closed and shaken afterwards. Finally, the box was opened and two pieces of paper were picked and opened out of their folds. The first selected class (i.e. Class 8E) was experimentally assigned, whereas the second selected one (i.e. Class 8B) was the control group.

In this research, the researchers employed measurement and observation techniques. They become the prerequisite of the experimental research (Ary, et al., 2010, p. 267). Data triangulation could be made through this concern.

The primary data collection instruments were multiple-choice and oral tests used to respectively measure Year-8 students' vocabulary and speaking achievements on descriptive texts. This research began with its attempt to ensure the content validity of the vocabulary tests by designing the table of specification. Through this way, the subject matters which were going to be tested remained obviously portrayed. With respect to the types of vocabulary, only high frequency words and low frequency words remained the foci. There were forty-eight high frequency words and twelve low frequency words set as English trial vocabulary test items of descriptive texts. The number of the former was emphasised. The reason is that around eighty percent or more of running words written in the majority of the texts are high frequency words (Nation, 2008, p. 8).

In order to have the ascertainment of the research instrument qualities, the researchers executed a pilot study of a seventy-minute English trial vocabulary test containing sixty items administered to a trial group (Class 8A) previously decided through a lottery technique. In other words, an initial experiment was run before it came to the main one. Ary, et al. (2010, p. 95) note that it is helpful to try out the proposed procedures on a few participants. The advantage of doing this pilot study was that its experimental result could have refinements.

The descriptive texts written by Mustriana, Kurniawati, & Arini (2009), Priyana, Irjayanti, & Renitasari (2008), Wardiman, Jahur, & Djusma (2008), and Widiati, et al. (2008) were referred to. Such texts had not been used as learning materials in advance. Hence, the participants were unfamiliar with them. The aforesaid textbook writers claim that it is assured that the content of the textbooks possesses relevance to the school-based curriculum (KTSP) and is based on National Education Ministerial Regulation of the Republic of Indonesia and

criteria of textbook development stated by the Board of Standard and National Education.

The pilot study shows favourable reliability of an English trial vocabulary test of descriptive texts (.79). Comprehensibly, this index has passed the rule of thumb. Meanwhile, the indices of item difficulty and item discrimination varied in terms of the acceptability. Based on the interpretation, concerning a follow-up to the vocabulary pretest and posttest, forty items were acceptably loaded and used. The rest (twenty items), on the other hand, were left out because their indices did not satisfy the standards of the item difficulty and the item discrimination. A fixed order of the descriptive texts was kept, while the item numbers were rearranged in the pretest and the posttest of vocabulary of descriptive texts.

Being totally not alike the main multiple-choice vocabulary tests, a live monologue test (as recommended by Thornbury, 2005, p. 126) required each experimental student to completely deliver an adopted or adapted descriptive text using his/her self-made semantic mapping framework and each controlled student to rely on his/her own speaking effort without any aids. An exception applied to the conduct of the pretest. Due to the non-appearance of semantic mapping creations, experimental students coped with ad lib performance. Since the eighty-minute speaking time allocated in the lesson plans was merely effective to cover twenty or twenty-one students' performances, questioning and answering activities were excluded at the end of each student's speaking turn.

It is noted that both of the groups received different treatment six times in two-hour learning sessions. The treatment materials were adopted from an English trial vocabulary test of descriptive texts. Lesson plans became the guidance that the researchers referred to. To ensure that the students had prior knowledge of the topics, they were asked to find and learn the materials before every treatment session ran.

In the vocabulary study, the experimental group involved the activities of making comprehensive links of words by generating and classifying them, and giving codes. The control group, conversely, learnt the vocabulary meanings through direct translation technique. It is believed that the vocabulary could contribute to the creations of semantic maps. The treatment tests aiming at measuring how well Year-8 students mastered the English vocabulary and were adept at speaking followed the treatment sessions. In other words, the treatment purposively led the way to the enhancement of the students' English vocabulary and speaking achievements on descriptive texts depending upon the inclusion and exclusion of semantic mapping. In the other regard, treatment tests, a supplementary tool of this research, gave evidence on the progress or regress of achievements.

Gay, et al. (2011, p. 255) affirm that unreliability occurs when a single measuring instrument is employed. This affirmation was taken as a principle. Essentially, to gather information of perception that Year-8 students had when using semantic mapping strategy and direct translation technique in learning English vocabulary and practising speaking, sets of questionnaires with a Likert scale from five to one were utilised. The responses of the sample can be converted

to numbers and percentages, treated, observed quantitatively, and used for comparisons (Ary, et al., 2010; Walliman, 2011).

Pilot testing the questionnaires was conducted beforehand to raise recommendations of further improvement from the three EFL teachers of SMP Santu Petrus. Simply, they were asked to thoughtfully and critically proofread the instruction and the content of the questionnaire blueprint and to provide recommendations. These recommendations were thoughtfully taken into consideration. Perplexing questionnaire items interpreted by them were revised, while the comprehensible ones were maintained. A table of specification of perception questionnaire was further created to technically load content areas and distribute item numbers. The questionnaire, hence, possessed favourable content validity.

One-way analysis of variance (ANOVA) was applied to analyse quantitative data obtained through the tests. Finding out the effect size (η^2) in terms of the given treatment was done afterwards to see how strong semantic mapping strategy influenced Year-8 students' English vocabulary and speaking achievements on descriptive texts. An analytic scoring rubric was developed to support speaking performance assessment.

Seeking out the means of the treatment test results and the percentages of responses was requisite. The means remained the indicators of the students' success in learning vocabulary and speaking. On the other hand, the percentages reflected how great the students' responses to the effects of semantic mapping strategy and direct translation technique were. The yielded test scores and observational data obtained, processed, analysed, and interpreted were, thus, apparently and solidly confirmed.

FINDINGS AND DISCUSSION

Findings

The experimental research findings gathered from a trial group, an experimental group, and a control group were procedurally and thoroughly analysed. The participants assigned in the respective groups were wholly present and well participated in all sessions. To simply restate, a step taken to initiate this research was conducting the pilot study on the quality of an English trial vocabulary test of descriptive texts through mathematical analysis on the raw scores. In order to find out to what extent the significant dissimilarity of the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English vocabulary and speaking achievements on descriptive texts, further specific analysis was administered. As defined in the previous methodological section, the procedures comprised the result analysis of the trial test, pretests, treatment tests, and posttests. Sheets of completed questionnaires were additionally analysed to cognise the students' perception of semantic mapping strategy and direct translation technique. All quantitative findings were, therefore, confirmed.

Continuing another important process of this research, two kinds of raw pretest and posttest scores were analysed. The states of the experimental and controlled students' prior vocabulary knowledge and vocabulary retention as a

result of semantic mapping strategy and direct translation technique could be recognised through the interpretation of the scores. Generally, with reference to the average scores obtained in the pretests, the students of 8E performed better than those of 8B. The difference of the pretest average scores was 3.60. Treated by means of semantic mapping strategy, the experimental students gained average scores incredibly accruing by 11.40 (from 63.84 to 75.24). The pretest-posttest average scores of the controlled students, conversely, dropped by 1.10 (from 60.24 to 59.14). It is undeniably proven that semantic mapping strategy can boost the students' vocabulary achievement, while direct translation technique is ineffective.

In terms of speaking performance, however, the experimental group is greater than the control group. The proof is that the former got an increasing average score (13.29) obtained from 57.56 subtracted from 70.85. Meanwhile, after experiencing the treatment using direct translation technique, the latter group's average score slightly worsened by .61 (from 58.41 to 57.80). Semantic mapping strategy, thus, apparently contributes to students' speaking achievement, while direct translation technique does not.

Alike the outcomes previously found, the treatment sessions covering the inclusion of semantic mapping strategy allowed the experimental participants to improve their vocabulary achievement. It was found that the average scores of the first treatment to the second treatment progressed by 1.22 (64.87 – 66.09). The condition was fixed next (66.09 – 66.09). In the end, regular increases of the third to the sixth average scores of treatment tests (66.09 – 69.51 – 69.75 – 72.43) occurred again. Meanwhile, frequent decline happened to the average scores contributed by the controlled participants (62.19 – 62.19 – 63.41 – 62.68 – 61.46 – 60.24). Logically, direct translation technique is not appropriate for vocabulary learning.

Six speaking treatment sessions embracing speaking performance yield contradictory findings. Encouraged with semantic mapping strategy, the experimental students could get improved when orally delivering the description. Excluding the use of semantic maps, the control group's speaking achievement, in contrast, worsened over time. Noticing the beginning and the end of the treatment results, it could be interpretatively revealed that 8E students raised the speaking average scores (58.78, 58.78, 62.07, 64.14, 66.58, and 68.65) by nearly 10.00. In the other regard, conventionally treated using direct translation technique, those obtained by 8B students (60.36 – 59.63 – 62.56 – 59.51 – 59.51 – 58.78) showed a 1.58 decrease. In this area, semantic mapping strategy outperforms direct translation technique.

Further analysis (i.e. one-way analysis of variance) was required to examine the statistical differences of the students' posttest scores in terms of the students' English vocabulary and speaking achievements on descriptive texts. The *F* test of significance was executed. Inspired with the table proposed by Ary, et al. (2010, p. 181), the following table of the variance analysis of the two groups was used to load the numbers indicating the former achievement:

Table 1
Result Summary of a One-way Analysis of Variance of the Two Groups Pertaining to Year-8 Students' English Vocabulary Achievement on Descriptive Texts

(1) Sources of Variance	(2) *SS*	(3) *df*	(4) *MS*	(5) *F*	(6) Level of Significance
Between groups	5,312.18	1	5,312.18	16.11	.01
Within groups	26,380.20	80	329.75		
Total	31,692.38	81			

The data presented in Table 1 show that there were, to affirm, two sources of variance (i.e. variance between groups and variance within groups). The sum of squares total (SS_t = 31,692.38), as given in Column 2, appeared as a result of addition of the results of the sum of squares between groups (SS_b = 5,312.18) and the sum of squares within groups (SS_w = 26,380.20). To obtain the degrees of freedom of variance between groups and variance within groups (consecutively 1 and 80 making a total of 81) given in Column 3, here are the ways linearly written: $(G-1) = 2-1 = 1$ and $(N-G) = 82-2 = 80$. Moreover, in Column 4, it was printed that the mean square between groups (MS_b) and the mean square within groups (MS_w) were consecutively 5,312.18 (5,312.18 / 1) and 329.75 (26,380.20 / 80). Finally, the *F* ratio (16.11) existing as a result of 5,312.18 / 329.75 was greater than both light and bold values (3.96 and 6.96) provided by Ary, et al. (2010) in the reference table of the percent points for the *F* ratio distribution (pp. 631-634). It is, hence, statistically significant at .01 level and the null hypothesis (H_o) is evidently rejected at that level.

It has been stated that based on the statistical findings, semantic mapping strategy possesses better effects on the students' English vocabulary achievement. Seeking out its effect size (η^2), the researchers conducted a computation in which the sum of squares between groups (SS_b) was divided by the total sum of squares (SS_t). It could be recognised from the following procedure:

$$\eta^2 = \frac{SS_b}{SS_t} = \frac{5{,}312.18}{31{,}692.38} = .16$$

Based on the calculation result, it could be interpreted that semantic mapping strategy powerfully affected the students' vocabulary achievement on descriptive texts by 16 percent. A large effect size, accordingly, exists.

In another area, dissimilarity between the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English speaking achievement on descriptive texts was found. The computation procedures followed were similar to the ones used when measuring the differences of the vocabulary achievement on descriptive texts. Both groups' speaking posttest marks were processed and the results were summarised in Table 2. The elucidation of how they appeared came afterwards.

Table 2
Result Summary of a One-way Analysis of Variance of the Two Groups Pertaining to Year-8 Students' English Speaking Achievement on Descriptive Texts

(1) Sources of Variance	(2) *SS*	(3) *df*	(4) *MS*	(5) *F*	(6) Level of Significance
Between groups	3,490.54	1	3,490.54	11.33	.01
Within groups	24,647.57	80	308.09		
Total	28,138.11	81			

As served on Table 2, the aforementioned sums of squares and their total were placed in Column 2. The third column, however, consisted of degrees of freedom of variance between groups $(2-1=1)$ and of variance within groups $(82-2=80)$ making a sum of 81. Dividing these two types of sum of squares (3,490.54 and 24,647.57) with their respective degree of freedom (1 and 80), mean square between groups (3,490.54) and the mean square within groups (308.09) were obtained. The division of both these last numbers (3,490.54 / 308.09) contributed to the *F* ratio (11.33). This ratio was over both light and bold values (3.96 and 6.96) provided by Ary, et al. (2010) in the reference table of the percent points for the *F* ratio distribution (pp. 631-634). It is, hence, statistically significant at .01 level and the null hypothesis (H_o) is evidently rejected at that level.

The effects on students' English speaking achievement that semantic mapping strategy brings also exist. In order to accomplish the investigation of the effect size (η^2), the formula covering the division of the sum of squares between groups (SS_b) and the total sum of squares (SS_t) was operated. Here are the process and the result:

$$\eta^2 = \frac{SS_b}{SS_t} = \frac{3{,}490.54}{28{,}138.11} = .12$$

To give affirmation, the effect size means that 12 percent of the students' speaking achievement on descriptive texts was affected by semantic mapping strategy. It is, hence, categorised as a medium effect.

Whether or not positive perception was revealed by the participants is a central topic discussed here. The discussion typically covered such facets as the fundamentality, the behavioural and cognitive impacts, and the practicality of semantic mapping strategy and direct translation technique. Decimals and percentages were in use.

Semantic mapping strategy attracted over a half (60.97%) of the experimental students to be certain of its importance in vocabulary achievement enhancement. The remaining ones, however, disputed this statement (17.08%) and possessed no responses (21.95%). Following this, 56.09% of the experimental students showed concurrence on the second questionnaire item on the importance of semantic mapping in enhancing their speaking achievement on descriptive texts. The rest, conversely, expressed disagreement (14.64%) and strong

disagreement (12.20%), and were undecided (17.07%). With regard to the feeling of comfort when implementing semantic mapping strategy, the findings reveal that the experimental students possessed positive responses (58.54%), negative responses (29.26%), and neutral responses (12.20%).

Moreover, the fourth item on the experimental students' delight of coping with semantic map creation received 65.85% of the approval. The rest showed disapproval (21.95%) and neutrality (12.20%). Over 50.00% of the experimental students concurred with each other when considering recognition of more words and meanings. Nevertheless, the others did not admit so (21.96%) and behaved neutrally (19.51%). Besides, the responses given for the sixth item on speaking confidence affected by semantic mapping strategy were these: strongly agree (24.40%), agree (34.14%), neutral (21.95%), disagree (17.07%), and strongly disagree (2.44%).

Regarding the easiness of utilising semantic maps, the experimental students showed agreement (58.53%), while the rest behaved negatively (26.83%) and had reluctance to provide responses (14.64%). Lastly, almost 70.00% of the experimental students admitted their willingness to continue applying semantic mapping strategy. The minority, in contrast, did not (14.63%) and were neutral (17.07%).

There can be no hesitation to aver that in general, concurrence made for the eight items by the experimental group is achievable. Semantic mapping strategy is truly recognised for its fundamental use, behavioural and cognitive impacts, and practicality. It is positive that the teaching and learning of vocabulary and speaking should, therefore, be supplemented by the implementation of semantic mapping strategy.

Turning to the control group's viewpoints of the questionnaire items on direct translation technique, 63.41% of the controlled participants argued against the statement of *It is essential to use direct translation technique to enhance my English vocabulary achievement*. Almost 22.00% of them accepted it, whereas the remaining ones responded to it neutrally (14.64%). In addition, for the second item on the importance of direct translation technique in improving the speaking skill, the majority (68.30%) of the controlled participants revealed dispute. Despite this, the rest of them indicated agreement (21.95%) and neutrality (9.75%). Paying attention to the comfort impacted by direct translation technique, 53.65% of the controlled participants had negative perception. The remaining ones gave these responses: *strongly agree* (4.88%), *agree* (17.07%), and *neutral* (24.40%).

Furthermore, 56.10% of the controlled students realised that they were unhappy when being treated using direct translation technique. 29.26% and 14.64% consecutively acted as the representation of those possessing concurrence and neutrality. Following these, the fifth item on the capability of direct translation technique to boost the controlled students' recognition of vocabulary and its meanings received rebuttal (68.29%). The others had conflicting responses (14.64%) and were undecided (17.07%). Next, the sixth item pertaining to the speaking confidence affected by direct translation technique was negatively

perceived by most controlled students (63.42%). 17.07% of the rest could not have the same points and were neutral (19.51%).

In addition, the seventh item related with the easiness of applying direct translation technique received approval of nearly 70.00% of the controlled students. The rest, nonetheless, expressed opposition (19.52%) and no decision (12.20%). In the end, it could be interpreted that unwillingness to preserve direct translation technique for making the success of learning more words and enhancing speaking skill was conveyed by 63.41% of the controlled students. In the other regard, the others preferred applying it (19.52%) and were undecided (17.07%).

The evidence discloses that not resembling semantic mapping strategy, direct translation technique was mostly viewed unfavourably. Despite easiness that this technique presented to the latter group, universally, it was regarded as an unimportant technique not leading to students' success in enhancing vocabulary and speaking achievements on descriptive texts and discomforting the students. Believably, encouraged by the majority, direct translation technique should be terminated.

Discussion

Reflected from computation results of the pretests and the posttests, there were statistically substantial increases of experimental Year-8 students' English vocabulary and speaking achievements on descriptive texts. Besides, the treatment test findings also show that the average marks obtained by the experimental participants frequently progressed. Positively, they possessed comfort, gladness, awareness of more words and their meanings, confidence, and easiness when the implementation of semantic mapping strategy was activated. They additionally wanted to continue using it. The indispensability of such strategy, therefore, remains truly sustainable.

These indications, on the other hand, did not apply to the control group. Decreases of pretest-posttest average scores occurred. The treatment also brought unfavourable numerical results. Clearly, the average score declines occurred in general. Attitudinally, the implementation of direct translation technique caused the students performing in the control group to feel uncomfortable, unhappy, and ashamed, and to be not aware of words and their meanings. Admitted by them, the conduct of this conventional technique in classrooms was unnecessary and should be evaded.

Statistical outcomes further appeared to indicate that due to the influence of semantic mapping strategy, there was enhancement of English vocabulary and speaking achievements on descriptive texts. The principal reason is that the effect sizes of semantic mapping strategy on these two dependent variables were consecutively large and medium. Therefore, the refusal of a null hypothesis and the acceptance of an alternative hypothesis of this study were confirmed because there is a significant dissimilarity between the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English vocabulary and speaking achievements on descriptive texts.

The fact that the experimental group is substantially superior to the control group in terms of scores and behaviour exists. It is convincing that even speaking, one of the most complex skills (Tokoz-Goktepe, 2014, pp. 1875-1876) can be developed through semantic mapping strategy. Implementing such strategy, to such a certain extent, is noteworthy for specifically contributing to creative and pleasurable learning autonomy (Agustina, et al., 2013; Arshadi & Yavari, 2015; Nilforoushan, 2012; Sadeghi & Taghavi, 2014), deep and critical thinking (Nilforoushan, 2012, p. 165), and extended vocabulary retention (Nilforoushan, 2012, p. 165), providing the learners with greater number of vocabulary inputs, and arousing them to actively and productively apply the vocabulary in contexts while delivering the description. Once visual aids, for example semantic maps, are in use, the students' efforts to develop the vocabulary knowledge and cognitive power are activated (Abebe & Davidson, 2012, p. 528).

This experimental study confirmed Baleghizadeh's & Naeim's (2011, p. 15) findings as well as Abdollahzadeh's & Amiri-Vardani's (2010, p. 1) and Dunn's (2013, p. 175) belief highlighting the effectiveness of semantic mapping strategy on the students' vocabulary knowledge. Speaking achievement was another dependent variable that it affected indeed. Henceforward, due to its effectiveness and usefulness, constantly preserving the implementation of this strategy in classrooms is no exception.

CONCLUSION AND SUGGESTIONS

Conclusion

This quasi-experimental research has been accomplished. Random assignment of an experimental group and a control group was conducted. Semantic mapping strategy and direct translation technique were respectively implemented by these groups with systematic procedures. Measurement and observation techniques were employed.

After collecting the data through the use of tests and questionnaires as well as measuring, interpreting, and discussing the findings, conclusive facts could be recognised. At first, there is a significant dissimilarity between the effects of implementing semantic mapping strategy and direct translation technique on the enhancement of Year-8 students' English vocabulary and speaking achievements on descriptive texts. The indicators of this significant dissimilarity are dissimilar means of the individual total scores in distributions 1 and 2 as well as F ratios. Accordingly, the researchers decided the refusal of a null hypothesis and confirmed the acceptance of an alternative hypothesis of this study.

The other proof to conclude is that the effect sizes of semantic mapping strategy on the two dependent variables were consecutively large and medium. As noted, the latter effect size was lower than the former one. To improve it, it is suggested that other researchers focus on varieties of more effective speaking activities assisted by semantic mapping strategy. A final conclusive fact is that in English vocabulary learning and English speaking practices, semantic mapping strategy gained positive perception from the experimental group. This kind of perception, however, was not shown by the control group conventionally treated

with direct translation technique. In short, semantic mapping strategy is superior to direct translation technique (Abdelrahman, 2013; Zahedi & Abdi, 2012a).

Suggestions

The evidence indicates that the effectiveness of semantic mapping strategy on vocabulary and speaking achievements on descriptive texts apparently exists. Also, advantages of utilising semantic mapping strategy have been found. The results of this investigation offered these recommendations for authentic practices in classrooms. At first, it is crucial that EFL teachers provide EFL students with opportunities to practically actualise Higher Order Thinking Skills (HOTS) by means of student-mediated semantic maps when coping with various kinds of English vocabulary and speaking activities on descriptive texts. Besides, EFL teachers ought to be skilful in performing their roles as demonstrators of the creation of systematic semantic maps and as facilitators of active learning and fascinating practices to contribute to EFL students' vocabulary and speaking achievements.

To enhance larger inputs of vocabulary knowledge and speaking skill on descriptive texts, semantic mapping is one of the effective strategies that should be essentially in use by the EFL students. Thus, it is strongly suggested that educational institutions should inexorably cover the implementation and the improvement of semantic mapping strategy for the learning development of any fields of science.

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